

REMARKS

Claims 11 and 16 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter. In response thereto, Applicants have amended claims 11 and 16 to address the issues raised by the Examiner. Accordingly, all of the claims are now deemed to be in compliance with 35 USC §112.

Claims 11-20 are rejected under 35 USC §103 as being anticipated by Sano et al., U.S. 6,664,565.

Independent claim 11 recites a wide band gap semiconductor device. The wide band gap semiconductor device includes an acceptor-doped material having ZnO that is formed under reducing conditions, thereby insuring a high donor density. At least one specimen of the acceptor-doped material is annealed at intermediate temperatures under oxidizing conditions so as to remove intrinsic donors and activate impurity acceptors.

Independent claim 16 recites a p-n junction. The p-n junction includes an acceptor-doped material having ZnO that is formed under reducing conditions, thereby insuring a high donor density. At least one specimen of the acceptor-doped material is annealed at intermediate temperatures under oxidizing conditions so as to remove intrinsic donors and activate impurity acceptors.

Sano et al. '565 describes growing a low temperature growth ZnO layer on a sapphire substrate at a temperature lower than a single crystal ZnO growth temperature.

However, Sano et al. '565 does not teach or suggest an acceptor-doped material having ZnO. Sano et al. '565 focuses solely on the growing of a low temperature growth ZnO layer

on a sapphire substrate. One of ordinary skill would not correlate the growth of a ZnO layer on a sapphire substrate as being an acceptor-doped material.

Secondly, Sano et al. '565 does not teach or suggest at least one specimen of the acceptor-doped material is annealed at intermediate temperatures under oxidizing conditions so as to remove intrinsic donors and activate impurity acceptors. Sano et al. '565 does describe using various growth temperature arrangements with the possible use of O radicals to accomplish that task. However, Sano et al. '565's growth arrangements are not used to remove intrinsic donors and activate impurity acceptors. Therefore, Sano et al. '565 does not anticipate independent claim 11 and 16.

As to claims 12-15 and 17-20, they are dependent on claims 11 and 16, respectively. Therefore, claims 12-15 and 17-20 are also allowable for the same reasons argued with respect to claims 11 and 16.

In view of the above amendments and for all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the objections and rejections made under 35 U.S.C. §§ 103 and 112, first and second paragraphs. Accordingly, an early indication of allowability is earnestly solicited.

If the Examiner has any questions regarding matters pending in this application, please
feel free to contact the undersigned below.

Respectfully submitted,

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